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ABSTRACT

A survey of 160 hard of hearing Canadian youth found that educational access was their single highest priority. Supports used by youth in postsecondary education included personal Frequency Modulation (FM) systems, notetaking, oral interpreting, sign interpreting, and tutors. Four components of access to education are identified, with particular reference to the University of British Columbia (UBC) in Canada where 8 deaf and 11 hard of hearing students are enrolled. The four components include: (1) technical supports, such as electronic captioning; (2) communication strategies; (3) environmental considerations; and (4) support services. Appended to the paper are a summary of a report on interpreting and captioning services at UBC, an article reprint on UBC classroom acoustics, and a checklist of support services. (JDD)

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CAMPUS ACCESS FOR STUDENTS WHO ARE HARD OF HEARING

Presentation to the Association of Higher Education and Disability at Columbus, Ohio July 29, 1994
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ED 376 630

Introduction

The largest group of hearing impaired students at most post-secondary institutions, if my own experience rings true, are hard of hearing students. As we know living in a hearing world when you are partially hearing is challenging and no less so when it is a post-secondary hearing environment. At the same time, for the post-secondary institution responding to the requirements of hard of hearing learners is complex and challenging because each hard of hearing person varies in terms of hearing loss and as well as in terms of their use of hearing and academic strategies.

For purposes of a definition the Canadian Hard of Hearing Association defines hard of hearing as a person who relies on oral means as their primary form of communication. This definition is by no means as clearcut as an audiological one since it can mean that a persons with a profound hearing loss may define themselves as hard of hearing while a persons with a severe loss may choose to consider themselves as Deaf.

Similarly, in terms of service provision hard of hearing persons may vary in terms of their use of such technology as hearing aids, assistive listening devices, electronic classroom captioning systems, notetaking, and, on occasion, the use of sign language. Some can be low maintenance students in terms of their support needs while others are high maintenance and this does not necessarily correlate to the extent of their hearing loss.

For this presentation I want to focus on a model of the essential components of access. The four parts of this model are: technical support, communication factors, environmental considerations, and support services. I will draw upon my involvements in work undertaken at the University of British Columbia in the last two years as well as a national youth study which was recently undertaken by myself for the Canadian Hard of Hearing Association.

National Youth Survey

First, I want to share some results from the national youth survey undertaken across Canada. Preliminary tabulations have been done of 160 responses and have found that educational access for hard of hearing young people is their single highest priority, following by employment.

Of the total preliminary responses 42 persons or 25 percent were post-secondary respondents while 60 per cent were high school respondents. They identified the supports used as follows:

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Canadian Youth Survey Profile of Post-Secondary Services

Personal FM system	Yes 19 persons No 23 persons	45%
Notetaking	Yes 20 persons No 22 persons	47%
Oral interpreting	Yes 6 persons No 35 persons	14%
Sign interpreting	Yes 11 persons No 30 persons	25%
Tutor	Yes 18 persons No 19 persons	43%

None of the students identified the use of electronic captioning in the classroom; this form is less prevalent in Canadian post-secondary institutions than in the United States but is starting to be used in several institutions.

Comparing these percentages to the results for secondary and elementary respondents the percentages using personal FM systems is slightly less while the numbers using notetaking, oral interpreting, sign interpreting and tutoring is slightly higher. These results tell us that use of the assistive listening device, student notetaker and tutoring are the most frequent form of technical support for hard of hearing youth. Anecdotal information suggests that this is the preference of some hard of hearing users and this is likely to continue. However, both oral interpreting and classroom captioning have been in limited use in Canada, as previously mentioned, and it will be interesting to determine if there will be greater consumer use if these forms are made more widely available.

One of the other parts of the survey discussed the matter of difficulties experienced by students in post-secondary institutions. Difficulties cited were not surprising, these being those related to the communication style of instructors, namely, teachers facing away from students when writing on a blackboard; difficulties hearing when other students spoke as well as hearing in group situations, and difficulties in hearing when slide shows, films and tapes were used to convey information. Also cited was the difficulty hearing in group discussions, large classrooms and in noisy situations such as cafeterias.

Components of Access

The preliminary results of the hard of hearing youth survey support a model of access which

considers four aspects: Technical Supports, Support Services, Communication Strategies, and Environmental Conditions. Each one of these will be discussed subsequently with particularly reference to UBC where the profile of deaf and hard of hearing students from April 1, 1993 to March 31, 1994 is as follows:

8 Deaf students
11 Hard of hearing students.

Of the above Deaf students, three use sign language interpreting, two students use classroom captioning, and three prefer to use a combination of lip reading and notetaker services.

Technical Supports

It has, of course, been recognized for some time that the provision of technical supports is essential for hard of hearing persons. At UBC, as is the case with most post-secondary institutions, students are provided required technical devices at no cost. Recently, in the province of British Columbia a provincial pilot project has been established so that the equipment provided in the secondary system can also go with the student into the post-secondary system. The advantage of this is that people are available to assist, these being people who are familiar with the past needs of the student in order that all that history is not lost in the transition.

The provision of electronic captioning is only recently starting to gain attention. As you are probably familiar this is a means of providing notes on a screen by a computer. The screen can either be a computer one, a large screen or a television screen.

At UBC we have been using a form of captioning. Two oral deaf students have been using this system which because it uses a regular keyboard can be provided by fast typists. The system does not have the same speed as a realtime captioning system but has been preferred over oral interpreting.

Recently, UBC adopted recognition of captioning services on the same basis as interpreting services in keeping with a recommendation of a President's report on these services. As part of its report, guidelines for use of captioning and interpreting services were developed; both are recognized as high cost services in contrast to other services. The Committee decided that these services should be intended for persons with a hearing loss whose primary form of communication requires use of interpreting or captioning. Both services would not be provided simultaneously although scribe notetaking and equipment could be. (A synopsis of the report is available as a handout.)

The following are some significant aspects of the report:

- recognition of electronic captioning on the same basis as sign and oral

interpreting

- provide interpreting or captioning to persons who whom this is a primary means of communication (not a secondary means)
- extend interpreting or captioning to faculty, staff and visitors, in addition to offering it for students
- recognize captioning or interpreting important for extracurricular activities (i.e. orientation events, sports, club activities)
- recommends priority registration for service delivery
- underscores importance of awareness about these services

The report itself did not recommend one type of captioning over another type; this is now being examined. To date, UBC has used a Porta-Cap system by which a regular keyboard is used to provide almost simultaneous access for persons with impaired hearing. While we have only had two persons use this service in the last year, it can be expected as this form of technology becomes more familiar to consumers it will considerably increase in use.

Communication Strategies

The nature of a hearing loss is invisible and hard of hearing students face the issue of having their disability recognized. When the nature of the disability relates to communication it is particularly important that effective communication strategies be employed as we all know; these benefit everyone of course.

Effective communication strategies have been identified by the Canadian Hard of Hearing Association as being a four-point awareness program to include:

- the nature of hearing losses, its socio-psychological impacts and its implications for the learning environment;
- accommodations required with the learning setting;
- the use of assistive listening device systems such as FM and Infrared systems and other technical devices as required by hard of hearing students for accessibility;
- communication strategies;

- the role of interpreters and captionists;

- appropriate instructional strategies and classroom management practices.

On the latter point, for example, would be encouraging the use of overheads and written handouts as well as ensuring that hard of hearing students are aware of deadlines and assignment requirements when the information is conveyed verbally.

At UBC we have produced a Faculty Guidebook which provides instructional tips related to hearing losses and we ensure that faculty members who have students with a hearing loss receive the publication.

Environmental Considerations

Elements of a barrier-free hearing environment are generally considered to include:

- telephones
- captioned films and videos
- acoustical considerations i.e. good sound quality, adequate lighting and reduction of magnetic and FM interference
- assistive listening systems
- visual signals i.e. flashing lights

With reference to an acoustic study undertaken in 1993 at UBC, 56 classrooms were randomly chosen to determine the acoustical quality of our institution's classrooms. The result of the study, undertaken by Dr. Murray Hodgson and two graduate students, showed that UBC classrooms are below optimum acoustical quality. Many classrooms have excessive reverberation which results in low speech levels, especially at the back of the rooms. Several rooms have noisy ventilation systems.

Factors which were found to improve the acoustic quality of rooms in the study were: carpets, acoustical ceiling tiles (suspended or not) and upholstered seating. However, in many cases their use may not be sufficient and additional sound absorptive treatments may be required.

It was found that in larger rooms the presence of large numbers of people reduces reverberation but this is offset by a reduction in speech levels resulting from the presence of people in large rooms. Background noise increases with more students and this affects speech intelligibility in classrooms. To reduce the effect of such noise, consider the size of the room and number of occupants. Other types of background noise can be decreased as follows:

- use an appropriate acoustical design of the ventilation system

- use low-noise projections which are now available
- reduce external noise in terms of placement to roads and other sources
- keep windows and doors closed during class

Good acoustics enhance hearing and reduce need for extra equipment. A hard of hearing person may be able to function with a body hearing aid in one situation, yet in another require more extensive FM or infrared equipment because of poor sound quality.

An issue of increasing importance is environmental interference with use of hearing aids on the T-switch, required for using infrared and FM listening devices as well as for the telephone.

Case: UBC encountered this problem in its new student services building, specifically in several meeting rooms. A consultant reviewed the rooms and recommended sound absorbing materials and relocation of the end point of a steel pipe underneath the floor of a room which had significant interference. The interference was reduced by half; however, an evaluation found that the interference had actually increased in an adjoining office which happens to be that of a hard of hearing staff member who makes extensive use of her hearing aid T-switch. Solutions to the issue are being undertaken.

If students similarly encounter such difficulties, they should be able to notify the student service office for relocation of the class, just as classes are relocated when inaccessible for persons in wheelchairs. However, it is desirable to prevent the problem and this is an area where further research is required.

<u>Support Services</u>

Two categories of support are integrative and direct services. Under the integrative category fall technical supports as well as notetaking, interpreting services and advocacy.

As part of its services it is important for the office to be available to advocate for students in sensitive situations and to encourage skill development of students in this regard. Case situation: Use of electronic captioning by L. While most professors are cooperative, one professor was resistant and objected to the captionist, believing that it provided the student with an "unfair advantage." The faculty advisor with whom the issue was raised by the student (as well as with the DRC) immediately talked over the matter with the professor and use of the captionist continued without further objection.

Direct services include:

- Tutoring
- Counselling
- Audiological support: testing, counselling

Tutoring is offered on a peer basis through the Disability Resource Centre. Counselling of a generic nature is offered by the Student Resources Centre. Counselling related to a hearing loss is offered by trained staff, either through professional or community agencies.

With respect to audiologic support and counselling, in 1993 UBC undertook a project to determine the needs of hard-of-hearing people for accessibility to post-secondary educational facilities, and to then design the audiologic component of a model program to meet their needs at the University of British Columbia.

As a means of identifying members of the university community with hearing impairment, campus-based hearing screening and diagnostic services were offered to all interested students, staff, faculty and visitors. 548 people had their hearing screened during two three-day campaigns, with 75 people identified as possibly having hearing impairment (13%). 111 people received basic diagnostic audiologic assessments at the School of Audiology and Speech sciences, with 66 of these individuals showing some degree of hearing impairment (59.5%) Most of these were referrals by various campus student service - Disability Resource Centre and Student Health. This suggested the need for continuing screening campaigns as well as referrals; since the student population is transient, screenings on an annual basis reach different persons.

A questionnaire was completed by respondents. Respondents, many with normal hearing, indicated difficulty hearing in large classrooms, particularly during discussions and when questions are asked.

As part of the project, 12 persons received individualized rehabilitative services; some received guided trial periods with assistive listening devices and others received behavioral aural rehabilitation therapy. Most participants reported that the services were beneficial, but outcomes were found to be unpredictable. This is because it is difficult to measure whether or not a behavioral change took place.

Besides the need for annual screenings, other recommendations made as a result of the study are:

- conduct ongoing hearing health promotion campaigns
- provide individualized needs assessments and ongoing technical support for assistive listening devices
- offer basic diagnostic services at least one day per week on campus, for all referral sources including self-referral
- carry out individualized therapy when requested, but cannot be regarded as the only

means of improving accessibility

- replace and upgrade the assistive listening device collection

The recommendations related to hearing screening are logically seen as part of the Student Health and Human Resources mandate and may involve the local health department, as it did at UBC. Assistive listening devices are provided by most disability offices; the need to upgrade and replace equipment relates to needs of clients. Other services mentioned, such as individualized therapy and diagnostic services require an identification of community or professional organizations or firms for which referrals can be made since these are highly specialized services.

This project has served to highlight the need for on-going hearing screening for everyone and the need for other hearing services, the role of the disability office being to promote the availability of such services and inform the University community about them.

Conclusion:

The issue of hearing access covers many components: environmental, technical, communicative and service delivery. By dealing with all of these elements greater access is promoted. We are still a long way from the ideal hearing accessible post-secondary community but, at least, we are on the way to identifying the issues, developing solutions and actively implementing them.

INTEGRATIVE SURVEY

DO YOU HAVE...

.... assistive listening equipment (i.e. personal FM equipment, infrared equipment)? What are your conditions for loaning out and repair?

.... rooms equipped with assistive listening systems (i.e. loop or FM infrared systems)?

.... electronic classroom or meeting notetaking?

.... sign interpreter services?

.... oral interpreter services?

.... notetaking?

.... TDD/TTY devices?

.... t-switch compatible phones?

.... captioned films, videos, AVS?

.... visual alarm signals?

.... hearing awareness promotion?

THE UNIVERSITY OF BRITISH COLUMBIA

Report on Interpreting and Captioning Services at UBC

Interpreting and captioning services should be provided for deaf and hard of hearing students in a coordinated manner, given fiscal and human resources, a President's Ad Hoc Committee on Interpreter Services recommends.

The Committee was established last summer by Dr. K. D. Srivastava following a decision of the B.C. Human Rights Council regarding the funding of interpreter services. Dr. Don Farquhar, Director of Student Health, served as Chair of the Committee which included Deaf, university and community representatives. Ruth Warick, Director of the Disability Resource Centre, coordinated the Committee.

The Committee's mandate was focused on students; early on it recognized that, besides interpreting services, captioning needed to be considered. Captioning is a form of computerized notetaking visible on a computer, overhead or television screen. Interpreting most commonly involves communication between users of the spoken word and users of a language mode based on sight, e.g. American Sign Language. Another form is oral interpreting which involves silent speechreading by the user.

The Committee's work was guided by the principle that Deaf and hard of hearing students should have the same right as hearing students to access post-secondary education when they meet the established academic criteria for access.

Ten recommendations covering service delivery, funding, standards and evaluation, awareness and admissions/registration were made by the Committee. The financial recommendations were consistent with B.C. Council of Human Rights decision regarding interpreting services for Nigel Howard, namely that students should pursue funding sources available to them and that the University should pick up the extra costs where there is a shortfall or all of the costs where no funds are available.

Other recommendations include:

- That it be recognized that University departments and offices should provide interpreting and captioning access for public events as an access issue.
- That the Ministry of Skills, Training and Labour provide a block grant to UBC to provide interpreter/captioning services similar to that provided to the colleges.
- That interpreting and captioning services for qualifying students be provided for:
  - Regular classes
  - Labs
  - Seminars
  - Class-related meetings and special events
  - Extracurricular events (20 hours per term).
- That UBC's pay scale for interpreters should be consistent with that used by colleges in the Lower Mainland.
- That UBC adopt the Association of Visual Language Interpreters of Canada (AVLIC) Code of Ethics accreditation standards and conditions of work for interpreters insofar as possible. As no similar standards or guidelines exist for captionists, the University should develop guidelines for captionists.
- That an on-going monitoring process be established and that, between its third to fifth year, a summary review be undertaken of the interpreter/captioning services program. As well, the quality of interpreting and captioning should be evaluated on an on-going basis.
- That the University create awareness and provide education about interpreting and captioning services using innovative approaches targeted at faculty, students and the community at large.
- That registration access for deaf and hard of hearing students be provided so that it is no less than that for hearing peers and enables ample lead-time for captioning and interpreting arrangements. Also, that the issue of an early admissions process for such students be pursued.

Copies of reports have been distributed to all Deans, Heads and Directors of UBC. Additional copies are available from the Disability Resource Centre, UBC, 1874 East Mall, Phone 822-5844; Fax 822-6656.

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Acoustical Survey Shows UBC Classrooms Lacking

As a first step toward improving campus accessibility for people with hearing disabilities and acoustics for everyone, Murray Hodgson, an assistant professor in Occupational Hygiene with a cross-appointment in Mechanical Engineering, has completed an acoustical survey of UBC classrooms.

Working with fourth-year physics students John Kim and Tony Skrjanec, Hodgson conducted a random acoustical survey of 45 of the approximately 450 classrooms at UBC. They measured the amount of reverberation in each room and the level of background noise to determine speech intelligibility.

"An ideal classroom should have a speech intelligibility of at least 80 per cent," said Hodgson. "None of the classrooms measured fell into that category."

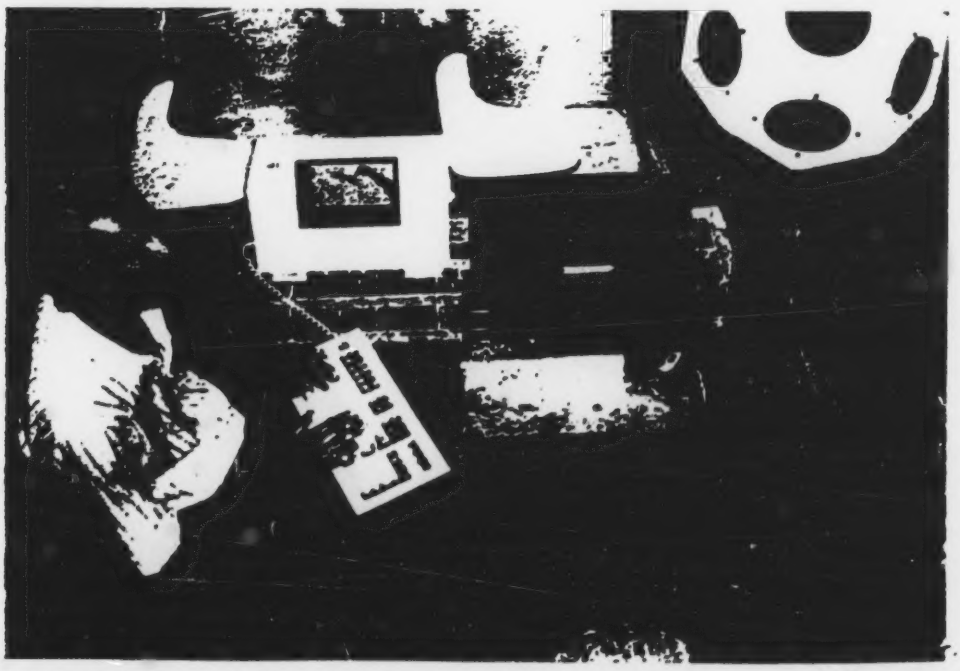
"Half of the classrooms measured between 60 and 80 per cent, which is good, while the remainder fell between 40 and 60 per cent, which is fair," he explained.

Although there has been an improvement in the level of speech intelligibility in classrooms housed in newer buildings on campus, Hodgson said these preliminary findings would indicate that UBC classrooms, in general, need work to become acoustically acceptable.

"Not only will this improve learning conditions for students, but it will address the issue of occupational hygiene by helping faculty avoid the stress and fatigue that can result from poor acoustical conditions in a classroom," said Hodgson.

Hodgson has prepared a report to the Ad Hoc Committee on Hearing Accessibility which reports to Dr. K.D. Srivastava, Vice President, Student and Academic Services. Ruth Warick, Director, Disability Resource Centre is the Chair of the Committee which will be reporting on ways to improve acoustics and hearing access by early Spring 1994.

Excerpted and edited from UBC Reports. Thanks to Ace Hefter for the use of his article and photo.



Assistant Prof. Murray Hodgson conducts study on reverberation and background noise levels in a UBC classroom.

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